

In the Claims:**Claim 1 (currently amended):**

- 1 1. A diffractive micro-structure color wavelength division device being a color wavelength
2 division device having a complex two-dimensional surface phase micro-structure whereby
3 ~~wherein distribution and geometric characteristic dimension of said micro-structure has a~~
4 ~~distribution and geometric characteristic dimension calculated to provide a multiwavelength~~
5 ~~modulation function and form a diffractive micro-structure color wavelength division~~
6 ~~element enabling enable~~ wavelength division and focus of white light of an incident
7 backlight source, ~~thereby resulting in so as to cause~~ wavelength division and focus on
8 different positions of space by three different spectrum regions of wavelengths of red, green,
9 blue.

Claim 2 (original):

- 1 2. The device as defined in claim 1, wherein said two-dimensional surface phase microstructure
2 of said color wavelength division device has a geometric characteristic microstructure which
3 is calculated on the basis of a diffractive theory of diffraction phenomenon and binary optics,
4 and through an operation of phase iteration algorithm.

Claim 3 (original):

- 1 3. The device as defined in claim 1, wherein a single unit of said color wavelength division
2 device is capable of producing in space a respective single point wavelength division and
3 focus of three wavelengths.

Claim 4 (original):

- 1 4. The device as defined in claim 1, wherein a single unit of said color wavelength division
2 device is capable of producing in space a respective multi-point wavelength division and
3 focus of three wavelengths.

Claim 5 (original):

- 1 5. The device as defined in claim 1, wherein said color wavelength division device can be
2 arranged in the form of array.

Claim 6 (original):

- 1 6. The device as defined in claim 5, wherein a plurality of said color wavelength division device
2 are arranged in array in a liquid crystal panel to divide a light source into three different
3 spectrum regions of wavelengths of red, green, and blue, with the wavelengths being focused
4 on corresponding red, green, blue TFT subpixels of the liquid crystal panel so as to provide
5 colors which are essential to color image display.

Claim 7 (original):

- 1 7. The device as defined in claim 5, wherein said color wavelength division device is used for
2 multi-point wavelength division and focus of multi points corresponding to arrangement of
3 red, green, blue TFT subpixels of a liquid crystal panel depends on color focal point
4 distribution of the microstructure of the color wavelength division film and arrangement of
5 TFT subpixels.

Claim 8 (original):

- 1 8. The device as defined in claim 4, wherein the wavelength division and focal point of said
2 color wavelength division device can be distributed on various definition positions of space.

Claim 9 (original):

- 1 9. The device as defined in claim 1, wherein said color wavelength division device is made on
2 a substrate of a polymeric material with light transparency, quartz, or glass.

Claim 10 (original):

- 1 10. The device as defined in claim 1, wherein said color wavelength division device is made on
2 one side of a substrate having a polarization transverse function.

Claim 11 (original):

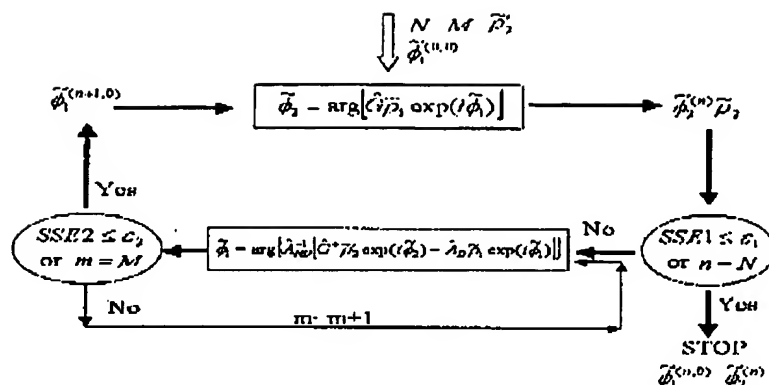
- 1 11. The device as defined in claim 1, wherein said color wavelength division device is made on
2 one side of a substrate having a polarized function.

Claim 12 (original):

- 1 12. The device as defined in claim 1, wherein said color wavelength division device is used in
2 a color CCD system to replaced of microlens and color filter.

Claim 13 (new):

- 1 13. The device as defined in claim 1, wherein said distribution and geometric characteristic
2 dimension of said microstructure is calculated according to the following phase iteration
3 algorithm:



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$$\phi_{2ka} = \arg \left\{ \frac{\sum_{j=1}^{N_1} \hat{G}_{kja} \rho_{1ja} e^{i \left(\frac{2\pi h_{1j} (n_{1a}-1)}{\lambda_{1a}} \right)}}{\sum_{j=1}^{N_1} \hat{G}_{kja} \rho_{1ja} e^{i \left(\frac{2\pi h_{1j} (n_{1a}-1)}{\lambda_{1a}} \right)}} \right\}$$

$$\phi_{1j} = \frac{Q_j}{|Q_j|}$$

$$Q_j = \sum_{a=1}^m \frac{2\pi(n_{1a}-1)}{\lambda_{1a}} \left\{ \sum_{i=1}^{N_1} \rho_{1ia} (\hat{G}^* \hat{G})_{ja} e^{i \left(\frac{2\pi h_{1i} (n_{1a}-1)}{\lambda_{1a}} \right)} \right\}$$

$$\sum_{k=1}^{N_2} \rho_{2ka} [\hat{G}_{kja} e^{-i \left(\frac{2\pi h_{2k} (n_{2a}-1)}{\lambda_{2a}} \right)}] \rho_{1ja} \times e^{i \left(\frac{2\pi h_{1j} (n_{1a}-1)}{\lambda_{1a}} \right)}$$

$$\lambda_{1a} = \frac{\sum_{n=1}^m \lambda_n}{m}$$

$$n_0 = \frac{\sum_{n=1}^m n(\lambda_n)}{m}$$